

Appl. No. 10/022,350
Amendment dated: August 18, 2004
Reply to OA of: May 18, 2004

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1(withdrawn). A bag splitting apparatus for use in splitting open bags containing solid waste, said apparatus comprising:

a rotatable flail structure having a plurality of flexible flails attached to a rotatable mounting, the flexible flails being rotatable at a relatively high speed of rotation to provide a whip like cutting action to tear open plastic bags while causing minimal damage to solid contents of the bags, and

a waste feed guide structure for receiving bagged solid waste and directing it towards the rotatable flail structure when the apparatus is in use.

Claims 2-4 (cancelled).

5(withdrawn). An apparatus as claimed in claim 1 wherein the flails are formed from a plastics material.

6(withdrawn). An apparatus according to claim 1 wherein the rotatable flail structure is adapted to rotate at at least 11 ms^{-1} when the device is in use.

7(withdrawn). An apparatus according to claim 1 wherein the waste feed guide structure comprises a feed chute having a top chute portion and a bottom chute portion, the bottom chute portion being attached to the top chute portion at a hinged joint to allow independent movement of the bottom chute portion relative to the top chute portion about the hinged joint, wherein the bottom chute portion is operable to direct bagged solid waste introduced into the feed chute towards the rotatable flail structure when the apparatus is in use.

8(withdrawn). An apparatus according to claim 7 which comprises a balance weight attached to the bottom chute portion to maintain the bottom chute portion at a pre-determined angle to the vertical whilst allowing deflection of the bottom chute portion away from the rotatable flail structure when a deflecting force is applied to the bottom chute portion.

9(withdrawn). An apparatus as claimed in claim 7 wherein the top chute portion comprises an adjustable back plate which is hinged to the bottom chute portion for independent movement relative to the bottom chute portion about the hinge.

10(withdrawn). An apparatus as claimed in claim 1, which further comprises wet separator apparatus adapted for use in separating solid waste according to density comprising:

- a separation tank containing a body of liquid;

- means for creating a horizontal flow within the liquid such that when solid waste is received in the body of liquid it is separated substantially into a heavy solid waste fraction having a density above a certain threshold and light solid waste fraction having a density below the threshold;

- means for separately removing the heavy and light solid waste fractions from the separation tank.

11(withdrawn). An apparatus according to claim 10 wherein:

- the means for removing the heavy solid waste fraction from the separation tank is a heavy discharge conveyor a part of which is positioned within the separation tank in alignment with the site of addition of waste into the tank, such that heavy solid waste falling under gravity substantially vertically towards the bottom of the tank below the site of addition is collected on the heavy discharge conveyor and conveyed out of the tank;
- and

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the means for removing the light solid waste fraction from the separation tank is a light discharge conveyor a part of which is positioned within the separation tank spaced away from the site of addition of waste into the tank in the direction of the horizontal flow of liquid within the tank, such that light solid waste which is carried laterally by the flow of liquid within the tank away from the site of addition is collected on the light discharge conveyor and conveyed out of the tank.

12(withdrawn). An apparatus as claimed in claim 11 which comprises an adjustable baffle plate positioned within the separation tank between the heavy discharge conveyor and the light discharge conveyor to separate material falling under gravity onto the heavy conveyor and material carried laterally onto the light conveyor.

Claims 13-15(cancelled).

16(withdrawn). An apparatus as claimed in claim 10, wherein the bag splitting apparatus is positioned in close proximity to the surface of the liquid in the separator tank such that any bags that are not split as they pass through the bag splitter apparatus but float on the surface of the liquid in the separator tank are maintained in contact with the rotatable flail structure.

17(withdrawn). A method of splitting open bags containing solid waste, said method comprising:

introducing at least one bag containing solid waste to a waste feed guide structure which directs the bag to a rotatable flail structure having a plurality of flails attached to a rotatable mounting,

rotating the flexible flails at a relatively high speed of rotation to provide a whip-like cutting action to tear open the bags whilst causing minimal damage to the solid contents of the bag.

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18(new). A bag splitting apparatus for use in splitting open bags containing solid waste according to claim 1, wherein the flexible flails are formed from a material having a Young's modulus of less than 50GN/m².

19(New). A method of splitting open bags containing solid waste, said method comprising:

introducing at least one bag containing solid waste to a waste feed guide structure which directs the bag to bag splitting apparatus of claim 1 having a rotatable flail structure having a plurality of flails attached to a rotatable mounting, rotating the flexible flails at a relatively high speed of rotation to provide a whip-like cutting action to tear open the bags whilst causing minimal damage to the solid contents of the bag.

20(New). A method of splitting open bags containing solid waste, said method comprising:

introducing at least one bag containing solid waste to a waste feed guide structure which directs the bag to bag splitting apparatus of claim 18 having a rotatable flail structure having a plurality of flails attached to a rotatable mounting, rotating the flexible flails at a relatively high speed of rotation to provide a whip-like cutting action to tear open the bags whilst causing minimal damage to the solid contents of the bag.